

## Direct and Partial Variation – Equation writing and solving practice

**Direct variation form:**  $y = mx$  or **dependent = constant times independent**

**Partial variation form:**  $y = mx + b$  or **dependent = constant times independent plus fixed value**

<u>a) Situation</u> Write an equation to model the relation between distance the bus travels (d), in km, and the time travelled (t), in hours, if it drives at a constant rate of 96 km/h.	<u>Independent variable</u>	<u>Dependent variable</u>	<u>Constant of variation</u>	<u>Fixed amount</u>	<u>Direct Variation (DV) or partial Variation (PV)</u>
<u>Words</u>					
<u>equation</u>					
<u>b) Situation:</u> Write an equation to model the relation between the pay (p), in dollars, Phil earns in a week if he makes \$100 a week plus \$11.75 an hour (t).					
<u>Words</u>					
<u>equation</u>					
<u>c) Situation</u> Write an equation to model the cost per pizza (c), in dollars, in relation to the number of toppings purchased, if each pizza costs \$8.75 plus \$2 per topping.					
<u>Words</u>					
<u>equation</u>					
<u>d) Situation</u> Write an equation to model the relation between the cost per package of jellybeans (c), in dollars, and the number of packages (p), if each package costs \$2.					
<u>Words</u>					
<u>equation</u>					
<u>e) Situation</u> Write an equation to model the relation between the pay received for tree planting (p), in dollars, if a person earns \$2 per tree planted (t).					
<u>Words</u>					
<u>equation</u>					
<u>f) Situation</u> Write an equation to model the relation between the pay received for tree planting (p), in dollars, if a tree planter earns \$25 per days plus \$2 per tree planted (t).					
<u>Words</u>					
<u>equation</u>					

2. Practice solving these equations algebraically. Write your answer in fraction then convert to decimal rounded to 1 decimal place (if the answer is an infinite decimal).

a)  $4x = 7$       b)  $7x + 2 = 9$       c)  $9 = 8x$       d)  $8 = 4x + 1$       e)  $7x + 6 = 9$       e)  $5 = 2x + 5$

3. Algebraically, find the hours it would take the bus (in a) to go 450 km (round off to nearest hour). Show your work.

4. Algebraically, find the number of hours Phil (in b) would have to work in a week to earn \$534.75. Show your work.

5. Algebraically, find the number of trees (in f) planted if the tree planter earned \$255 in a day. Show your work.

6. Algebraically, find out how much the tree planter (in f) will earn in a day if he or she plants 275 trees. Show your work.

7. Algebraically, find the number of trees (in e) planted if the tree planter earned \$486 in a day. Show your work.

8. Algebraically, find how much the tree planter (in e) will earn if she or he plants 465 trees.